Claims

What is claimed is:

1. A method, comprising:

shifting a center frequency of selected ones of a plurality of received signals by selected amounts to provide a plurality of shifted signals located in a frequency domain; and

combining the plurality of shifted signals into a composite signal centered at a selected frequency.

2. The method of claim 1, further comprising:

converting the composite signal into a plurality of digital signals.

3. The method of claim 2, further comprising:

receiving the plurality of digital signals at an interference canceller.

4. The method of claim 2, wherein converting the composite signal into the plurality of digital signals further comprises:

sampling the composite signal with a single analog-to-digital converter to provide a multiplicity of digital samples.

5. The method of claim 4, further comprising:

providing the multiplicity of digital samples to a plurality of digital bandpass filters.

6. The method of claim 5, wherein at least one of the plurality of digital bandpass filters provides a series of digital channel samples, further comprising:

providing the series of digital channel samples to a down converter.

7. The method of claim 1, wherein the plurality of received signals comprises a plurality of baseband analog signals.

8. The method of claim 1, further comprising:
canceling interference present in the composite signal.

9. The method of claim 8, wherein canceling the interference present in the composite signal further comprises:
reconstructing the interference present in the composite signal.

10. The method of claim 1, wherein the plurality of shifted signals are located substantially sequentially in the frequency domain.

11. The method of claim 1, wherein the selected frequency is approximately zero cycles-per-second.

12. An article comprising a machine-accessible medium having associated data, wherein the data, when accessed, results in a machine performing:
shifting a center frequency of selected ones of a plurality of received signals by a selected amount to provide a plurality of shifted signals located in a frequency domain; and
combining the plurality of shifted signals into a composite signal centered at a selected frequency.

13. The article of claim 12, wherein the composite signal includes a plurality of protocols associated with the plurality of received signals.

14. The article of claim 12, wherein the composite signal includes a plurality of signals from a plurality of antennas.

15. The article of claim 12, wherein the data, when accessed, results in the machine performing:

selecting a single sampling frequency rate for the composite signal; and

determining a down conversion frequency for selected radio frequency signals associated with the plurality of received signals.

16. The article of claim 12, wherein the plurality of shifted signals are located substantially sequentially in the frequency domain.

17. The article of claim 12, wherein the selected frequency is approximately zero cycles-per-second.

18. An apparatus, comprising:

an analog-to-digital converter to receive a composite signal; and

an analog stage to couple to the analog-to-digital converter, wherein the analog stage is to shift a center frequency of a plurality of received signals by a selected amount to provide a plurality of shifted signals for combination into the composite signal.

19. The apparatus of claim 18, wherein the analog stage further comprises:

a plurality of sections corresponding to the plurality of received signals, wherein selected ones of the sections include at least one bandpass filter and a mixer.

20. The apparatus of claim 18, wherein the analog stage further comprises:

a combiner selected from a power combiner, a mixer, and an adder.

21. The apparatus of claim 18, further comprising:

an interference canceller to couple to the analog-to-digital converter.

22. The apparatus of claim 18, further comprising:

a plurality of digital processing modules corresponding to the plurality of received signals, wherein selected ones of the digital processing modules include at least one of a digital bandpass filter and a down converter.

23. The apparatus of claim 18, further comprising:

an active channel controller to adjust a sampling rate associated with the analog-to-digital converter.

24. A system, comprising:

an analog-to-digital converter to receive a composite signal;

an analog stage to couple to the analog-to-digital converter, wherein the analog stage is to shift a center frequency of a plurality of received signals by a selected amount to provide a plurality of shifted signals for combination into the composite signal; and

an omnidirectional antenna to couple to the analog stage.

25. The system of claim 24, further comprising:

an interference canceller to couple to the analog-to-digital converter.

26. The system of claim 24, further comprising:

an active channel controller to couple to the analog-to-digital converter.

27. The system of claim 26, wherein the active channel controller is to select a channel included in the composite signal corresponding to a selected protocol.

28. The system of claim 26, wherein the active channel controller is to determine a down conversion frequency according to an activity status of a selected section included in a plurality of sections corresponding to the plurality of received signals.